In the Claims:

1. (Currently amended) An apparatus for producing water on board of an aircraft while using one or more fuel cells, ~~wherein a partial or complete integration of a water production unit in the form of one or more~~ comprising at least one high temperature fuel ~~cells (7)~~ cell that has an anode side and a cathode side and that is integrated into a heat-producing arrangement of an aircraft engine, wherein the heat-producing arrangement optionally additionally includes at least one combustion chamber, wherein the fuel cell is adapted to carry out a fuel cell process and the optional combustion chamber is adapted to carry out a combustion process, ~~is provided in such a manner that the combustion chambers (7A) of the aircraft engine are replaced completely or partially by the high temperature fuel cells (7) and thus either supplementing or completely replacing the process that takes place in the conventional type combustion chambers,~~ characterized in that:

the high temperature fuel cell is an ~~cells (7) are constructed as type:~~ oxide ceramic fuel cell (SOFC - solid oxide fuel cell), or [[as]] a molten carbonate fuel cell (MCFC), or a [[type]] fuel cell that ~~is comparable in~~ has a power and temperature level equivalent to an oxide ceramic fuel cell or a molten carbonate fuel cell;

[[that]] the apparatus includes a hydrogen supply that is arranged and adapted to supply pure hydrogen ~~is supplied~~

to the anode side of said high temperature fuel ~~cells (7), that~~ cell;

an air intake is arranged and adapted to supply air ~~is supplied~~ to the cathode side of said high temperature fuel ~~cells, that~~ cell;

the hydrogen supply and the air intake are further arranged and adapted to supply a mixture of hydrogen and air ~~is supplied~~ to the combustion ~~chambers (7A), that~~ chamber;

at least the hydrogen supply is constructed for a closed loop control or can be shut off ~~completely, and that~~ completely; and

the apparatus further includes a single stage or multistage turbine (16) [[is]] connected downstream of the anode side of the high temperature fuel cell, said turbine adapted to convert ~~converting the~~ thermal energy of [[the]] anode exhaust gas (35) into rotation energy.

2. (Original) The apparatus of claim 1, characterized in that the conversion of the thermal energy takes place by a Stirling motor and/or by one or more combinations of different thermal engines, for example a turbine and a Stirling motor.

Claims **3 to 24** (Canceled).

25. (Previously presented) The apparatus of claim 1, comprising a compressor (13) and means for supplying gained mechanical energy to said compressor.

26. (Previously presented) The apparatus of claim 25, wherein said compressor is used for charging said anode side of said high temperature fuel cell (7) with hydrogen (15) under pressure.

27. (Previously presented) The apparatus of claim 1, further comprising a condensation process (18) connected downstream of said high temperature fuel cell or high temperature fuel cells (7), said condensation process condensing water out of a portion of anode exhaust gas (35) of said fuel cell (7).

28. (Previously presented) The apparatus of claim 1, wherein said high temperature fuel cells (7) are constructed for pressurizing the air or oxygen side, and the fuel or hydrogen side, whereby equal or different pressures are permissible on the anode side and on the cathode side.

29. (Previously presented) The apparatus of claim 1, comprising a source (1) for supplying liquid or gaseous hydrogen.

30. (Previously presented) The apparatus of claim 29, further comprising a liquid hydrogen evaporator (17) positioned

upstream of said high temperature fuel cells (7) or said combustion chambers (7A).

31. (Currently amended) The apparatus of claim 30, further comprising an anode ~~exhausat~~ exhaust gas condenser (18) and wherein said evaporator (17) is constructed to be operable by process heat of said anode exhaust gas condenser (18).

32. (Previously presented) The apparatus of claim 31, wherein said evaporator (17) is constructed as a pipe bundle heat exchanger which is arranged as a ring shape around said condenser (18) or circularly within said condenser (18).

33. (Previously presented) The apparatus of claim 31, wherein at least a portion of said condenser (18) is operable with cooling air (19).

34. (Previously presented) The apparatus of claim 1, further comprising a container (32) for collecting used water and not needed condensate as gray water.

35. (Currently amended) The apparatus of claim 1, further comprising a gray water evaporator (33) wherein air (20) heated in a condensation process is used for evaporating gray water, a pump [[(37)]] (45) for feeding gray water into said evaporator (33), and a filter provided for

retaining solid and suspended matter out of said gray water.

36. (Previously presented) The apparatus of claim 1, wherein produced steam is blown in upstream of a second turbine stage (9) of said multistage turbine where said steam is mixed with cathode exhaust air.

37. (Previously presented) The apparatus of claim 1, wherein any germs and microorganisms present in gray water (32) are thermally killed.

38. (Previously presented) The apparatus of claim 1, further comprising means for withdrawing water of distilled quality from a condensation process (18) and for distributing said distilled quality water, a salination station (23) for adding a dose of salt to produce drinking water for galleys, hand wash basins and showers and for supplying distilled water to toilets and humidifiers.

39. (Previously presented) The apparatus of claim 1, wherein said multistage turbine comprises turbine stages (8, 9) for driving compressor stages (5, 6) and a fan (11), and wherein compressor stages (5, 6) pressurize an air side of said high temperature fuel cells (7) and of said combustion chambers (7A).

40. (Previously presented) The apparatus of claim 39, wherein an air throughput (3) of said fan (11) is used either in an engine for propulsion or in an APU for pressurization of pressurized air systems and/or of an air conditioning system.

41. (Previously presented) The apparatus of claim 39, wherein said fan (11) is coupled with a first compressor stage (6) and with the second turbine stage (9), and wherein a second compressor stage (6) and the first turbine stage (8) are coupled with each other and run on coaxial shafts with different revolutions per minutes.

42. (Previously presented) The apparatus of claim 41, wherein the number of coupled compressor stages and turbine stages, the direction of rotation of these stages, and the number of coaxial shafts rotating one within the other are constructed at discretion.

43. (Previously presented) The apparatus of claim 1, further comprising a waste water collection tank (28) for collecting waste water and wherein said waste water is completely or partially dehydrated at (30) and the thus gained water portion is fed into a gray water collection tank (32).

44. (Previously presented) The apparatus of claim 1, constructed for being operable without supplying water to a water system.

45. (Previously presented) The apparatus of claim 1, wherein said combustion chambers and said high temperature fuel cells are operable separately and in any desired combination.

46. (Previously presented) The apparatus of claim 1, wherein individual combustion chambers or high temperature fuel cells are adapted to be switched off for a separate operation of combustion chambers or high temperature fuel cells.